ECHO IN PEDIATRIC AND ADULT CONGENITAL HEART DISEASE: Including Multimodality Imaging

October 5-7, 2018

Arizona Grand
8000 South Arizona Grand Parkway
Phoenix, AZ 85044

Patrick W. O'Leary, M.D., FACC, FASE
Frank Cetta, M.D., FACC, FASE
Crystal R. Bonnichsen, M.D.
M. Yasir Qureshi, MBBS, FASE

REGISTER ONLINE NOW!
https://cveducation.mayo.edu/
COURSE DESCRIPTION

The 34th Annual Echocardiography in Pediatric and Adult Congenital Heart Disease Symposium returns to Phoenix, AZ and will highlight the use of echocardiography and other cardiac imaging techniques to recognize, understand, and manage patients with congenital heart disease using a case based format. This three-day symposium is designed to provide a comprehensive understanding of the anatomy, clinical aspects, imaging, and management of patients with congenital heart disease. The symposium will include case discussions, didactic seminars, anatomic and imaging correlations, discussion of multimodal imaging and live, hands-on scanning seminars to illustrate the impact of cardiac imaging on treatment, diagnosis, and management of patients with congenital heart disease.

LEARNING OBJECTIVES

Upon conclusion of this program, participants should be able to:

• Describe the anatomy and physiology of common congenital cardiac conditions as well as the surgical/interventional procedures used to treat them
• Interpret 2-D echo/Doppler hemodynamics in the setting of congenital heart disease
• Recognize limitations of echocardiography and other imaging techniques
• Integrate the most up-to-date echocardiographic and multimodality imaging techniques into patient management

Attendance at this Mayo course does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course.

INTENDED AUDIENCE

This course is designed for pediatric and adult cardiologists, surgeons, fellows in training, and cardiac sonographers. The emphasis is on echocardiography. Participants should have a good working knowledge of echocardiography.

ACCREDITATION STATEMENT

In support of improving patient care, Mayo Clinic School of Continuous Professional Development is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Mayo Clinic College of Medicine and Science designates this live activity for a maximum of 16.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Successful completion of this CME activity, which includes participation in the activity, with individual assessments of the participant and feedback to the participant, enables the participant to earn 16.75 Medical Knowledge MOC points in the American Board of Pediatrics’ (ABP) Maintenance of Certification (MOC) program. It is the CME activity provider’s responsibility to submit participant completion information to ACCME for the purpose of granting ABP MOC credit.

Completion data will be shared with the ABP through PARS.

Other Health Care Professionals

A certificate of attendance will be provided to other health care professionals for requesting credits in accordance with state nursing boards, specialty societies, or other professional associations.
Attendees should ensure in advance that their credentialing or licensing organization accepts *AMA PRA Category 1 Credits™* from the sponsor of this activity.

**GRANTS AND EXHIBITS**

At the time of this printing, a complete listing of commercial supporters (financial or in-kind) was not available. Appropriate acknowledgment will be given to all supporters at the time of the meeting.

Exhibits will be available for viewing at all scheduled breaks.

**DATE AND LOCATION**

The Echo in Pediatric and Adult Congenital Heart Disease course will be held October 5-7, 2018. Course headquarters will be located at the Arizona Grand, 8000 South Arizona Grand Parkway, Phoenix, AZ 85044.

**General Session:** Sonoran Sky Ballroom I-IV  
**Exhibits/Breakfast/Breaks:** Sonoran Sky Ballroom V  
**Lunch:** Camelback Patio  
**Reception:** Oasis Pool

**REGISTRATION**

Registration is available at cveducation.mayo.edu. The registration fee includes tuition, comprehensive course syllabus, continental breakfasts, break refreshments, lunch, and welcome reception. Although it is not Department of Cardiovascular Medicine (CV CME) policy to limit the number of registrants for a course, conference room facilities may necessitate closing of enrollment; therefore, early registration is advised. A letter of confirmation will be sent upon receipt of payment and completed registration form on-line. Please present the confirmation letter when checking in at the meeting registration desk.

**For additional information, contact:**  
Cardiovascular Continuing Education  
200 First Street SW – Gonda 6-138  
Rochester, MN 55905  
**E-mail:** cvcme@mayo.edu  
**Phone:** 800-283-6296 or 507-266-6703  
**Website:** cveducation.mayo.edu

**AIRPORT**

Phoenix Sky Harbor International Airport (PHX) in Phoenix, Arizona is the recommended airport for arrival. The hotel is approximately 6 miles (15 minutes) from the Airport.

Phoenix, Arizona is a friendly city that greets thousands of visitors from around the world each year. The city is serviced by an international airport with multiple flights daily. Access to and from the airport is provided by taxi, shuttle service, and rental car.

*Travel arrangements are the sole responsibility of the individual registrant.*

**CAR RENTAL**

If you prefer to rent a car while on property, Enterprise Rent A Car is available on property. Please speak with the concierge to have this arranged.
LODGING ACCOMMODATIONS

The Arizona Grand is the only AAA Four Diamond/M&C Gold Key Award winning all-suite resort featuring golf course off-property, expansive athletic club, spa, salon, 7-acre water park (open only Saturday and Sunday) and six unique dining venues.

Guest rooms have been reserved for attendees and their guests with special course rates at the Arizona Grand. In order to receive the special rate, reservations must be made before the room block is filled or before the expiration date of Monday, September 10, 2018 whichever comes first.

Reservations will be taken following this date based on space and rate availability. A special rate of $225 single/double has been negotiated for our group. Please call reservations at 877-800-4888 and identify yourself as a participant of the CHD Conference when making your reservation.

On-line reservations can be made at:

- High speed internet is complimentary in all guest rooms within our block of rooms.
- No resort fee.
- Complimentary self/valet parking.
- Complimentary access to the athletic club.
- Discount off published spa/salon pricing.

Lodging arrangements are the sole responsibility of the individual registrant.

Mayo Clinic Department of Cardiovascular Diseases is not responsible for expenses incurred by an individual who is not confirmed and for whom space is not available at the meeting. Costs incurred by the registrant such as airline or hotel fees or penalties are the responsibility of the registrant.

PARKING

Complimentary self-parking and valet parking are available at the hotel.

WELCOME RECEPTION

Welcome Reception – Thursday, October 5, 2018 – 6:30-7:30 p.m.
Attendees and their guest(s) are cordially invited to join the course faculty for the Welcome Reception on Thursday, November 3, 2016 from 6:30-7:30 p.m. in the Oasis Pool. This casual reception welcomes you to Arizona, officially opens the course, and offers you the perfect opportunity to make connections with existing and new colleagues.

RECREATION/LEISURE ACTIVITIES/RESTAURANTS

Athletic club including yoga, pilates, spinning, Zumba, water aerobics, strength training and personal trainers. Mountain bikes are available through the concierge for a fee. Over 60 miles of trails for biking or hiking. In addition, there is a spa, oasis water park (closed in November) and golfing available on-property.

Additional information on visiting Arizona: http://www.arizonaguide.com/
Restaurants in the Hotel or Walking Distance: Lobby Grill (American Cuisine of all kinds), Lobby Bar (Wood-fired pizzas, burgers, and sandwiches, chicken wings and salads), Marketplace Café (Starbucks along with Grab and Go), Aunt Chilada’s (Mexican Fare), Rustler’s Rooste (Western Steakhouse with live music).

**FACULTY**

**Course Director(s)**
Patrick W. O’Leary, M.D., FACC, FASE
Professor of Pediatrics, Mayo Clinic; Consultant, Division of Pediatric Cardiology; Director Imaging and Outcomes Section of the Todd and Karen Wanek Family Program for Hypoplastic Left Heart Syndrome, Mayo Clinic, Rochester, MN

Frank Cetta, M.D., FACC, FASE
Professor of Pediatrics and Medicine, Mayo Clinic; Past Chair, Pediatric Cardiology Division; Consultant, Department of Cardiovascular Medicine and Pediatric Cardiology, Mayo Clinic, Rochester, MN

Crystal R. Bonnichsen, M.D.
Assistant Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Medicine and Internal Medicine, Mayo Clinic, Rochester, MN

M. Yasir Qureshi, MBBS, FASE
Professor of Pediatrics, Mayo Clinic; Consultant, Division of Pediatric Cardiology, Mayo Clinic, Rochester, MN

**Mayo Faculty**
Heather N. Anderson, M.D.
Clinical Fellow, Division of Pediatric Cardiology, Mayo Clinic, Rochester, MN

Heidi M. Connolly, M.D., FACC, FASE
Professor of Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Medicine; Director, Mayo Clinic Adult Congenital Heart Center; Chair for Education, Department of Cardiovascular Medicine, Mayo Clinic, Rochester, MN

Benjamin W. Eidem, M.D., FACC, FASE
Professor of Pediatrics and Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Medicine and Pediatric Cardiology; Director, Pediatric & Fetal Echocardiography Laboratory, Mayo Clinic, Rochester, MN

Donald J. Hagler, M.D., FACC
Professor of Pediatrics and Medicine, Mayo Clinic; Consultant, Department of Cardiovascular Medicine and Pediatric Cardiology, Mayo Clinic, Rochester, MN

Heather L. Hullopeter, RDCS
Clinical and Congenital Sonographer, Cardiovascular Ultrasound Imaging and Hemodynamic Laboratory, Mayo Clinic, Rochester, MN

Jonathan N. Johnson, M.D.
Associate Professor of Pediatrics, Mayo Clinic; Consultant, Division of Pediatric Cardiology; Chair, Pediatric Cardiology Division, Medical Director, Pediatric Heart Failure and Pediatric Heart Transplantation, Mayo Clinic, Rochester, MN

Joseph J. Maleszewski, M.D., FACC, FCAP
Professor of Pathology and Medicine, Mayo Clinic; Consultant, Department of Laboratory Medicine & Pathology, Cardiovascular Medicine, and Clinical Genetics, Mayo Clinic, Rochester, MN

Francois Marcotte, M.D.
Director, Adult Congenital Heart Disease Clinic, Mayo Clinic Arizona; Senior Associate Consultant, Mayo Clinic, Phoenix, AZ

William R. Miranda, M.D.
Senior Associate Consultant, Mayo Clinic; Assistant Professor of Medicine, Department of Cardiovascular Medicine, Mayo Clinic, Rochester, MN

Sabrina D. Phillips, M.D., FACC, FASE
Associate Professor of Medicine, Mayo Clinic; Director, Adult Congenital Heart Disease Clinic, Mayo Clinic Florida; Senior Associate Consultant, Department of Cardiovascular Medicine, Mayo Clinic, Jacksonville, FL

Sameh M. Said, M.D., CS
Associate Professor of Surgery, Mayo Clinic; Consultant, Department of Cardiovascular Medicine, Mayo Clinic, Rochester, MN

Alex J. Thompson, M.D.
Clinical Fellow, Division of Pediatric Cardiology, Mayo Clinic, Rochester, MN

Melissa (Missy) Willers, RDCS
Clinical and Congenital Sonographer, Cardiovascular Ultrasound Imaging and Hemodynamic Laboratory, Mayo Clinic, Rochester, MN

Guest Faculty
Erik G. Ellsworth, M.D.
Director, Cardiac MRI, Phoenix Children's Hospital, Phoenix, AZ; Pediatric Site Director, Mayo Clinic Arizona, Phoenix, AZ

Shaji Menon, M.D.
Associate Professor of Pediatrics, Adjunct Associate Professor of Radiology, Division of Pediatric Cardiology, University of Utah, Salt Lake City, UT

Kavitha N. Pundi, M.D.
Department of Pulmonary Hypertension and Pediatric Cardiology, Phoenix Children's Hospital; Assistant Professor of Pediatrics, Mayo Clinic Arizona, Phoenix, AZ
FACULTY DISCLOSURE

As a provider accredited by ACCME, Mayo Clinic College of Medicine and Science (Mayo Clinic School of Continuous Professional Development) must ensure balance, independence, objectivity and scientific rigor in its educational activities. Course director(s), planning committee, faculty, and all others who are in a position to control the content of this educational activity are required to disclose all relevant financial relationships with any commercial interest related to the subject matter of the educational activity. Safeguards against commercial bias have been put in place. Faculty also will disclose any off-label and/or investigational use of pharmaceuticals or instruments discussed in their presentation. Disclosure of this information will be published in the course materials so those participants in the activity may formulate their own judgments regarding the presentation.

NATIONAL PHYSICIAN PAYMENT TRANSPARENCY PROGRAM

Mayo Clinic College of Medicine complies with the requirements of the National Physician Payment Transparency Program OPEN PAYMENTS (Physician Payments Sunshine Act).

THURSDAY, OCTOBER 4, 2018

6:00-7:00 p.m. Registration – Camelback Patio/Foyer

FRIDAY, OCTOBER 5, 2018

7:00 a.m. Registration – Kaibab/Lantana/Mesquite Foyer

INTRODUCTION TO CHD

Moderators: Dr. O’Leary and Said

7:30 a.m. Segmental Anatomic Approach to Congenital Heart Disease
Dr. Joseph J. Maleszewski

7:55 a.m. Imaging Issues in Congenital Heart Disease -- Orientation and More
Dr. Frank Cetta

8:20 a.m. Ultrasound Hemodynamic Evaluation in Congenital Heart Disease
Dr. Patrick W. O’Leary

8:45 a.m. Panel Discussion
Drs. Maleszewski and Cetta; Drs. O’Leary and Said, moderators

9:00 a.m. Refreshment Break

LATE MORNING TETRALOGY OF FALLOT

Moderator: Drs. Cetta and Said

9:30 a.m. Anatomy of Tetralogy of Fallot
Dr. Joseph J. Maleszewski

9:55 a.m. Infantile Tetralogy – Echocardiographic Findings That Alter the Treatment Plan and How Not to Miss Them
Dr. Benjamin W. Eidem
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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/ Authors</th>
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<tbody>
<tr>
<td>10:20 a.m.</td>
<td>Early Postoperative Problems in Tetralogy of Fallot</td>
<td>Dr. Shaji Menon</td>
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<td>10:45 a.m.</td>
<td>Pulmonary Regurgitation After Repair of Tetralogy of Fallot</td>
<td>Dr. William R. Miranda</td>
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<td>11:10 a.m.</td>
<td>Case Studies in Tetralogy of Fallot</td>
<td>Dr. Heather N. Anderson</td>
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<td>11:35 a.m.</td>
<td>Panel Discussion</td>
<td>Drs. Maleszewski, Eidem, Menon, and Miranda; Drs. Cetta and Said, moderators</td>
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<td>12:00 p.m.</td>
<td>Lunch – Sunset Patio</td>
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<td>1:00 p.m.</td>
<td>Low Pressure Left to Right Shunts; Including Secundum ASD, Sinus Venosus ASD and Anomalous Pulmonary Veins</td>
<td>Dr. Jonathan N. Johnson</td>
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<td>1:25 p.m.</td>
<td>Ventricular Septal Defects</td>
<td>Dr. Donald J. Hagler</td>
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<td>1:50 p.m.</td>
<td>Atrioventricular Septal Defects</td>
<td>Dr. Frank Cetta</td>
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<td>2:15 p.m.</td>
<td>Ebstein Malformation</td>
<td>Dr. Patrick W. O’Leary</td>
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<td>2:40 p.m.</td>
<td>Panel Discussion</td>
<td>Drs. Johnson, Hagler, Cetta, and O'Leary; Drs. Qureshi and Said, moderators</td>
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<td>3:00 p.m.</td>
<td>Refreshment Break</td>
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<tr>
<td>3:30 p.m.</td>
<td>Echo Challenge Cases</td>
<td>Captains: Drs. O’Leary and Bonnichsen vs Drs. Cetta and Qureshi</td>
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<td>Moderator: Dr. Menon</td>
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<td>Case Presenters: Drs. Thompson, Anderson, Connolly, Miranda, and Ms. Hullopeter and Ms. Willers</td>
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<tr>
<td>5:15 p.m.</td>
<td>Adjourn</td>
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<td>5:30 p.m.</td>
<td>Welcome Reception - Oasis Poolside – Family Invited</td>
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**SATURDAY, OCTOBER 6, 2018**

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/ Authors</th>
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<tr>
<td>7:00 a.m.</td>
<td>Continental Breakfast</td>
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**TRANPOSITION OF THE GREAT ARTERIES**

**Moderators: Drs. Eidem and Said**
7:30 a.m.  Anatomy of Transposition of the Great Arteries  
*Dr. Joseph J. Maleszewski*

**INFANT TGA - MAKING THE DIAGNOSIS AND PLANNING THE INTERVENTION**  
*Moderators: Drs. Eidem and Said*

7:55 a.m.  TGA With an Intact Ventricular Septum  
*Dr. M. Yasir Qureshi*

8:20 a.m.  TGA With VSD  
*Dr. Patrick W. O’Leary*

8:45 a.m.  Early Postoperative Problems in Infants With Transposition of the Great Arteries  
*Dr. Shaji Menon*

9:10 a.m.  Cases in TGA  
*Dr. Alex J. Thompson*

9:30 a.m.  Panel Discussion  
*Drs. Maleszewski, Qureshi, Menon, and Thompson; Drs. Eidem and Said, moderators*

9:45 a.m.  Refreshment Break

**TRANSPOSITION OF THE GREAT ARTERIES IN THE ADULT PATIENT**  
*Moderators: Drs. Bonnichsen and Said*

10:15 a.m.  Late Postoperative Problems After the Arterial Switch Operation  
*Dr. Frank Cetta*

10:40 a.m.  Understanding and Assessing the Atrial Switch Operations (Mustard and Senning)  
*Dr. Sabrina D. Phillips*

11:05 a.m.  Congenitally Corrected Transposition of the Great Arteries  
*Dr. Heidi M. Connolly*

11:30 a.m.  Cases in Adult TGA  
*Drs. Miranda and Bonnichsen*

11:45 a.m.  Panel Discussion  
*Drs. Cetta, Phillips, Connolly, and Miranda; Drs. Bonnichsen and Said, moderators*

12:00 p.m.  Lunch – Box Lunch

**BREAKOUTS**

1:00-2:00 p.m.  **Session #1:** Live Scanning - Drs. Qureshi, Eidem, Ellsworth, Hagler, Menon, and Pundi with Ms. Hullopeter and Ms. Willers – Dr. O’Leary, moderator – **Sonoran 5**

**Session #2:** Imaging and Management -- Decision Making in the Adult With Congenital Heart Disease – Drs. Bonnichsen, Connolly, Marcotte, Miranda, and Phillips – Drs. Cetta and Said, moderators – **Sonoran 1-4**
2:00 p.m. Adjourn - Enjoy the Afternoon at the Waterpark or Golf Course!

SUNDAY, OCTOBER 7, 2018

7:00 a.m. Continental Breakfast

**FUNCTIONALLY SINGLE VENTRICLE PHYSIOLOGY**
*Moderators: Drs. Cetta and Said*

7:30 a.m. Anatomy of the Functionally Single Ventricle  
*Dr. Joseph J. Maleszewski*

7:55 a.m. Case Studies in Prenatal Single Ventricular Circulation  
*Dr. M. Yasir Qureshi*

8:20 a.m. Case Studies in the Pre-Fontan Patient  
*Dr. Benjamin W. Eidem*

8:45 a.m. Advances in the Surgical Approach to the Functionally Single Ventricle  
*Dr. Sameh M. Said*

9:10 a.m. Case Studies in Patients After Fontan Palliation  
*Drs. Jonathan N. Johnson and Heidi M. Connolly*

9:35 a.m. Panel Discussion  
*Drs. Maleszewski, Qureshi, Eidem, Said, Johnson, and Connolly; Dr. Cetta, moderator*

9:45 a.m. Refreshment Break

10:00 a.m. Cases of the Year  
*Drs. Connolly, Menon, Phillips, Bonnichsen, Hagler, and Qureshi; Drs. Cetta and O’Leary, moderators*

11:45 a.m. Adjourn
Registration

Registration is only available online at: cveducation.mayo.edu

Registration Fee:

**Before Wednesday, September 5:**

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<tr>
<th>Course Registration</th>
<th>Fee</th>
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<tr>
<td>(MD, PhD, DO, PharmD)</td>
<td>$755.00</td>
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<td>(Residents, Sonographers, RN)</td>
<td>$620.00</td>
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**After Wednesday, September 5:**

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<tr>
<th>Course Registration</th>
<th>Fee</th>
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<tr>
<td>(MD, PhD, DO, PharmD)</td>
<td>$855.00</td>
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<tr>
<td>(Residents, Sonographers, RN)</td>
<td>$720.00</td>
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Mayo Clinic Department of Cardiovascular Medicine implemented an online conference registration system in January 2012. If this is your first time using the online system, you will need to create a profile. The attendee’s email address is required upon registration. A letter of confirmation and receipt will be forwarded to this email address upon receipt of submitted registration and payment. Present this letter when checking in at the meeting registration desk.

The registration fee includes tuition, electronic course syllabus, continental breakfasts, break refreshments, lunch and reception.

Although it is not Department of Cardiovascular Medicine policy to limit the number of registrants for a course, conference room facilities may necessitate closing of enrollment; therefore, early registration is advised. Enrollment for this program is limited.

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Rochester, MN 55905
E-mail: cvcme@mayo.edu
Phone: 800-283-6296 or 507-266-6703
Website: https://cveducation.mayo.edu/

Cancellation Policy

If you cancel your participation in this course, your registration fee, less a $75 administrative fee, will be refunded when written notification is received by Department of Cardiovascular Medicine (CV CME) before Friday, September 21, 2018 (fax#: 507-266-7403 or email: cvcme@mayo.edu). No refunds will be made on or after Friday, September 21, 2018. Canceled registrations are non-transferable.

CV CME reserves the right to cancel or postpone any course due to unforeseen circumstances. In the unlikely event CV CME must cancel or postpone this course, CV CME will refund the registration fee,
but is not responsible for any related costs, charges, or expenses to participants, including fees assessed by airline/travel/lodging agencies.